Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

34. Mesogloia virescens Carmichael. Massachusetts and South. 2–12.
35. Mesogloia zosteræ Areschoug. Halifax. 6–8.
36. Leathesia tuberiformis Gray. Whole Coast. ½–1½.
37. Elachista fucicola Fries. Whole Coast. 1 or less.
38. Myrionema strangulans Greville. Coast. One-tenth.
39. Cladostephus verticillatus Agardh. Long Island and North. 3–8.
40. Cladostephus spongiosus Agardh. Long Island and North. 2–5.
41. Sphacelaria cirrhosa Agardh. New York and North. 1–2.
42. Sphacelaria radicans Dillwen. Massachusetts. ½.
43. Ectocarpus brachiatus Harvey. Massachusetts and North. 2–4.
44. Ectocarpus littoralis Lyngby. Virginia and North. 6–12.
45. Ectocarpus siliculosus Lyngby. Whole Coast. 3–6.
46. Ectocarpus tomentosus Lyngby. Massachusetts and North. 2–6.
47. Ectocarpus fasciculatus Harvey. New Jersey to Massachusetts. 3–6.
48. Ectocarpus granulosus Agardh. Massachusetts. 4–8.
49. Ectocarpus Durkeei Agardh. New Hampshire. ——. 2.
50. Ectocarpus Mitchellæ Harvey. Nantucket. 2–3.
51. Ectocarpus Landsburgi Harvey. Nova Scotia. 1–2.
52. Ectocarpus Hooperi Harvey. New York (?). 3–8.
53. Myriotrichia filiformis Griffiths. Maine. 1–2.

HUMAN REMAINS IN THE SHELL HEAPS OF THE ST. JOHN'S RIVER, EAST FLORIDA. CANNIBALISM.*

BY PROF. J. WYMAN.

After repeated examinations of the more important shell heaps on the St. John's, we have failed to find any evidence that they were used for the burial of the dead, or for any other purpose than dwelling places. Human bones have, however, been discovered in them, from time to time, under peculiar circumstances, and as their presence opens a question of much interest, it will be desirable to describe in detail each of the instances in which they have been detected, especially where the bones have been found in considerable numbers.

1. The first which came under the notice of the writer, was at Old Enterprise, on Lake Monroe, in 1861, a few rods above the high bluff and near the shore of the lake. The deposit of shells where the bones were found is about four feet thick, and has been much washed away by the waves during the great storms. While making an excavation near the roots of a large palmetto tree

---

*We are permitted to print this paper in advance from the "Sixth Annual Report of the Peabody Museum of Anthropology," now in press.—Eds.

which had been partially uncovered by the action of the water, human bones were found about two feet below the surface. A foot above them, where a fire had been made, were ashes and large pieces of oak charcoal. The bones were not burned, however, and did not appear to have been connected with the fire in any way. They were broken into pieces a few inches long, just as was the case with the bones of the deer from the same deposit, or from the adjoining bluff, and like them had lost their organic matter, were incrusted with lime, and had become cemented together, so as in all respects to have the appearance of the same age as the bones of the animals associated with them.

The fragments consisted of the head of a femur broken off just below the lesser trochanter, two fragments of the shaft of this bone, one fragment each of the shaft of the tibia, fibula and humerus, a part of a scapula, including the glenoid portion, two metatarsal bones, and one phalanx of a thumb. It is quite probable that there were originally a larger number of pieces and that many had been carried away by the action of the water in its encroachments on the shore.

Two important and more complete discoveries were made in the neighborhood of Blue Spring, though the localities were somewhat over two miles apart.

2. One of these was on the left bank of the creek through which the spring discharges, and about thirty feet from its union with the river. The bones were found about two feet below the surface, embedded in the shells, and represented a large part of the bones of the skeleton. They were nearly all more or less broken, and were scattered about without any definite order. Many fragments of the skull, however, were found near together. Besides the pieces of the cranium, there were fragments of the following bones: viz., the lower jaw, right and left clavicle, right humerus, right and left scapula, ulna of both sides, right radius, right and left femur, right tibia, the two patellæ, upper end of the sternum, one fragment of pelvis, many fragments of ribs and a few bones of hands and feet. The humerus, radius and tibia of the left side were not found.

3. The other collection is from a low oval mound, in the swamp or meadow, two miles in a northerly direction from Blue Spring. Here, again, portions of many parts of the skeleton were present. Notwithstanding careful search beyond the limits where the bones

were discovered, not a single piece of the head was found. Of eleven vertebræ found, all except one (the fifth lumbar) had their arches detached, as if for removing the spinal cord. The right innominate bone was broken into four pieces; of the left only one large, including the acetabulum, and a few small pieces remained. The right femur was broken into three and the left into five pieces; the left radius and left ulna each into three pieces, the left humerus into two, and the head of it was missing. All the bones of the right arm and right leg below the knee were missing. There were many fragments of ribs. The different pieces were scattered about over a surface of four or five square yards and promiscuously mingled. The bones had not been previously disturbed.

Near these remains were found some fragments of a large earthen vessel, apparently capable of holding several gallons, and varying from a half to three-quarters of an inch in thickness. The bones had lost all their organic matter, and when struck against each other have a decided ring.

4. A small collection of human bones was found in a shell field a few hundred feet south of the mouth of the creek at Blue Spring, and near the river. They consisted of fragments of the humerus, tibia, lower jaw, scapula and ulna, broken in the same manner as those just described, and also bones of the hands and feet. As the field in which they were discovered had been ploughed, it is uncertain to what extent the breaking of them may have been accidental. The appearances were the same as in the bones already described. There were no signs of a burial place.

5. Many fragments of an imperfect human skeleton were found in the mound on Huntoon Island, and near Huntoon creek. They were covered with shells to the depth of eighteen inches, and though the place was completely explored, only the following were discovered; viz., fragments of a skull, an imperfect lower jaw, pieces of the right and left thigh bones, a piece of an upper arm bone, some fragments of the forearm and leg, and a few joints of fingers and toes. The bones were all of a diminutive size, evidently those of a dwarf. Basing an estimate on the proportions of the thigh bones to the whole skeleton, the individual is supposed to have been about three feet and a half high. The angles and articular processes of the lower jaw were broken off and the molar teeth had nearly all disappeared during life, and their

alveoli had been absorbed. These facts indicate an individual which was, at the least, adult. Forty feet from the place where these bones were found, a large tree had been overturned, and among the shells carried up by the roots, was found a human ankle bone (an astragalus), but a careful search brought to light nothing else, in this direction, belonging to man.

6. A single fragment of a human upper jaw of the right side, was found in the large shell heap on the same island and near the river buried to the depth of six or seven feet, and could have been deposited there only at the time the mound was built. An upper arm bone, whole, parts of the lower jaw, and a few fragments of other bones, were discovered in the débris at the base of the same mound where it had been undermined, but the precise place from which they had fallen is uncertain.

7. In the remnant of a mound, three-quarters of a mile below Hawkinsville and on the left bank, human bones were found, about a foot deep, in a layer of shells not more than two feet thick. They appeared to be of the same age as the shells in which they were embedded, and were all broken, and much scattered, a proof that they had not been buried. A second deposit was found twenty-five feet from the preceding, the bones were somewhat incrusted with lime, and were more decomposed. There were from the first locality seven fragments of cranium, two of the left humerus, two of the left clavicle, one of the right ulna, one fragment each of the right and left tibia and several small pieces of other bones. The shore where both these sets were found had been undermined and it is probable that many pieces had been washed away.

8. Excavations made on the side of Bartram's Mound near the river, and where it had been undermined, brought to light numerous pieces of human bones all belonging to one skeleton. There were eighteen fragments of cranium, the right half of the lower jaw, the teeth of which had nearly all been lost and their alveoli absorbed, and thirty fragments of other bones including those of a femur, humerus, radius, tibia, fibula, and a patella. All of these appeared to have been covered for a long time, had lost nearly all their organic matter and were incrusted with a thin layer of calcareous deposit. It is quite likely that here too some of the bones originally deposited had been washed away by the river, as the mound at this point had been largely destroyed. In

several instances the cranial bones were broken into small fragments and were irregularly cemented together by the deposit of lime.

9. A large block of consolidated shells split from the front of Osceola Mound left exposed a portion of a human skull. In detaching this, other bones were brought to view and excavations were continued until no further traces could be discovered. The chief part of the bones were removed in a mass of conglomerate and subsequently exposed by chiselling away the matrix, but from which they have not been wholly detached. The organic matter has entirely disappeared and the matrix adheres so firmly to the bones, that it is very difficult to separate it without at the same time breaking off pieces of bony structure.

Of all the human remains we have met with in the shell mounds these last are the most interesting, both on account of their greater age and of their being almost the only ones which can, with any certainty, be referred to the earliest period of the mounds. Osceola mound is one of the series in which pottery is not found, and its materials, as well as the mound as a whole, have undergone great changes.

There are certainly bones from two individuals, mingled. Two thigh bones, which are mates, lie side by side, but in reversed positions, the upper part of one corresponding with the lower of the other. The articular portions are gone. Parts of at least two others were found, one of which was removed nearly whole. Of the other there are two cylindrical portions, one 55 and the other 90^{mm} long. The exposed ends of the shorter one show the interesting fact that the bone had been artificially divided, by cutting a groove around the circumference of the bone and thus weakening it and then breaking the remainder. This is a common method of dividing bones used by Indians. The broken surface and the marks of the cutting instrument are quite obvious. In the longer piece these marks are present but less distinct. As further evidence of the presence of bones from two individuals, may be mentioned the lower ends of two upper arm bones, both from the right side and of different sizes, and both cemented together. There are three tibiæ, two of which are decidedly flattened and belonged to the same individual, the third having more nearly the triangular section, but only slightly flattened.

Besides the above there are fragments of a scapula, pelvis, humerus, radius, tibia, ribs, tarsal and carpal bones and phalanges. There are but few pieces of ribs, and but a single vertebra has been recognized.

The different bones were artificially broken in a few cases only, and contrasted very strongly in this respect with those previously noticed.

We have met with but a single other instance where human bones have shown signs of having been wrought by the aborigines. This was in the coast shell heap at Ipswich, Massachusetts, where Mr. Eliot Cabot discovered a human upper arm bone, which, as shown by the lines and marks on the surface had been ground or scraped. The nature of this instrument found is uncertain, as the end has been broken off. It is preserved in the Peabody Museum.

10. At Huntoon Island, and in the rear of the shell mound on the St. John's, are two conical mounds, and are supposed to be burial mounds, one fifteen and the other twenty-five feet high. Excavations carried to the depth of six feet, but arrested at this depth on account of our inability to get the necessary labor, did not, however, reveal any evidence of burial in either of them. A collection of human bones was obtained from the top of the larger of them at the depth of about a foot below the surface, which in all respects correspond with those previously described. They were scattered over an area of several square yards and belonged to a young individual as shown by the size of the bones and the condition of the epiphyses. Each of the long bones was broken into two or more, and the skull into many, fragments. Pieces were found from all the principal divisions of the skeleton. There can be no doubt that the bones were intentionally broken, as the upper ends of two humeri show precisely similar marks of violence. In each case the bone is broken off an inch below the head, by an instrument which crushed the bone, the fragments of which, flattened down, are retained in opposition, not having been originally completely separated. The bones are all incrusted with a calcareous deposit, which in some cases cements the fragments, and others the smaller bones, as of the hands, together. Their condition is similar to that of the bones from Bartram's Mound already described.

The above are the chief instances of the presence of human remains in the shell mounds which have fallen under our notice. They are not supposed to be the only ones which existed, for they were all but one chance discoveries. In all but a single instance there was nothing to direct attention to one place rather than another in making excavations, and as these were begun at random it is all but certain that many others escaped detection.

It would perhaps be going too far to say that the presence of human bones, under the circumstances above described, amounted to absolute proof of cannibalism. The testimony of eye-witnesses would be the only sure evidence of it. There is, however, nothing with regard to them which is inconsistent with this practice, nor does any other explanation occur to us which accounts for their presence so well.*

If there were any eye-witnesses of cannibalism among the Europeans who explored Florida in the earliest days of its history, they have left no records of the fact. In later times Jonathan Dickenson, a Pennsylvania quaker, who was wrecked on the coast near St. Lucia in 1699, in the narrative of his sufferings, calls the inhabitants cannibals, but nowhere saw human flesh eaten by them. The most direct statement he makes is as follows: "at this town about a twelve-month before a parcel of Dutch men were killed, who having been cast away on the Bohemia (Bahama) Shoals, they, in a flatt which they built, escaped hither and were devoured by these cannibals, as we understand by the Spaniards."† I am indebted to Dr. C. F. Winslow for a statement in the records of Nantucket that Capt. Christopher Hussey "was cast away on the Florida coast and devoured by cannibals." This event was also in the latter part of the seventeenth century.‡

The reasons derived from our own observations for believing that the ancient inhabitants of the St. John's were cannibals may be stated as follows:

---

* A statement by Le Moyne would at first sight seem to suggest another explanation. The natives when first seen by the French had the habit of dismembering the bodies of their slain enemies and carrying off the scalps and limbs as trophies. Plate XVI represents a celebration in which these are hung up on stakes and around which a ceremony is going on. While such a custom might account for the presence of human bones in the shell heaps, it would not for the fragmentary condition in which these are found, nor for the systematic manner in which all the bones of the limbs, as well as of the other parts of the skeleton, are broken up. In addition it may be stated that for reasons we have given elsewhere there is some doubt whether the Indians who built the shell mounds were the same as those found when the Europeans arrived in Florida, and consequently a practice prevailing among the latter might not exist among the former.

† God's Protecting Providence, Man's direct Help and Defence, etc., p. 60, 8vo. London, 1700.

‡ See doings of the Nantucket Historico-genealogical Society, in Nantucket Inquirer and Mirror. Nov. 22, 1873.

1. The bones, an account of which has just been given, were not deposited there at an ordinary burial of a dead body. In this case after the decay of the flesh there would have remained a certain order in the position of the parts of the skeleton, especially in the pelvis, the long bones of the limbs, the vertebral column and the head. The bones would be entire as in other burials. In the cases here described, they were, on the contrary, scattered in a disorderly manner, broken into many fragments, and often some important portions were missing, as the head at one of the mounds near Blue Spring, the bones of an arm and leg at the other, and in other mounds a still larger number of bones. The fractures as well as the disorder in which the bones were found evidently existed at the time they were covered up, as is shown by the condition of the broken ends, which had the same discoloration as the natural surfaces.

2. The bones were broken as in the case of those of edible animals, as the deer, alligator, etc. This would be necessary to reduce the parts to a size corresponding with the vessels in which they were cooked, or suitable for roasting, or even for eating raw.

3. The breaking up of the bones had a certain amount of method; the heads of the humerus and femur were detached as if to avoid the trouble, or from ignorance as to the way, of disarticulating the joints. The shafts of these bones, as also those of the forearm and leg, were regularly broken through the middle. The olecranon process of the ulna, was in some cases detached in the same manner as the corresponding part has been found to be in the deer.

4. There is no evidence that the bones were broken up while lying exposed upon the ground by wild animals, as the wolves and bears. If they were thus broken one might reasonably expect to find the marks of teeth, but after a careful examination of hundreds of pieces they have not been seen in a single instance. As a general rule dogs, and the same is true of wolves, gnaw chiefly the ends of the bones, which are of a soft and spongy texture, leaving the shaft, which is solid and unyielding almost intact, or at any rate to the last. This is the case even with the bones of birds, which are so much smaller. In the bones from

the mounds the spongy ends show no marks of teeth and are well preserved though detached from the shaft.

The conclusion we have given is strengthened by the fact that cannibalism prevailed largely in both North and South America, and that the natives of America were led to it by the same motives as were those of other parts of the world. In general this practice may be said to commend itself to the savage mind from the following considerations:—

With some it was a matter of choice, depending upon a liking for human flesh as an article of food, as with the Fijians, who had not even the excuse growing out of a scarcity, for food of all kinds existed with them in greatest abundance. With others, and these are by far the most numerous, it was practised as an act of vengeance or triumph over a fallen foe, and with still others it may be said to have been of the nature of a superstitious rite or ceremony, as with the ancient Mexicans, the Miamis, and others. To the above should be added the pressure of extreme hunger, which drives both savage and civilized man to this terrible alternative.

Of starvation nothing need be said, except that it is not improbable that the idea of eating human flesh as ordinary food, may, perhaps, have had its origin in eating it as a necessity. Once tasted and found to be good, as all cannibals aver that it is, under the influence of savage instincts and passions, the conversion of an enemy's flesh into meat to eat would be very natural.

Of course the above motives, excluding the last, may be more or less combined, and a savage by eating his enemy may get his revenge and satisfy his appetite at the same time. Or, as with the New Zealander, who loves human flesh as a choice food, and who also eats it under the superstitious belief that he thus not only incorporates the body of his enemy with his own, but absorbs also his enemy's soul, so that ever after the two are one. To the victors this had an especial significance, for believing in a future state and the presence of his enemy there, if he eats him in this life he makes sure of it that there will be no trouble with him hereafter, for he possesses him body and soul already.

In the cannibalism as practised in the two Americas, one recognizes the same motives and tendencies and often combined with them, in addition, a degree of cruelty to their victims unsurpassed in other parts of the world.

The degraded and brutal inhabitants of Tierra del Fuego, in their fearful struggle for existence, with the elements on the one hand, and savage foes and scarcity of food on the other, would seem to be almost naturally led to the practice of eating human flesh. Capt. Fitzroy has given a sad picture of these poor, wretched creatures, living on the very verge of regions just capable of sustaining life. They habitually eat their prisoners of war, and in severe winters, when snow and ice cut off their usual supply of food, the old women are sacrificed without hesitation. Having choked and smothered them over a dense smoke, they eat them to the last scrap. The life of the dog, however, is spared under these circumstances, as he can render efficient aid in hunting, which the old women cannot.*

Of the prevalence of cannibalism in Guiana, there is evidence from various sources. The histories printed by De Bry † are full of particulars of the manner in which the bodies of victims are prepared, cooked and eaten. Pizarro and his companions, in their first but fruitless attempts to reach Peru from Panama, came suddenly upon an Indian village, when the inhabitants instantly fled leaving human flesh cooking before the fire.‡ We have the authority of Humboldt for its existence on the Orinoco at the time he travelled there.§ Brett found what he was undoubtedly correct in considering the remains of a cannibal feast in an ancient shell heap.‖ The Mexicans practised cannibalism on a most extensive scale on certain occasions. A prisoner was delivered to the warrior who had taken him in battle, and by him after being dressed was served at an entertainment of his friends. "This," says Prescott, "was not the coarse repast of famished cannibals, but a banquet teeming with delicious beverages and delicate viands, prepared with art and attended by both sexes, who conducted themselves with all the decorum of civilized life." ¶

There were other kinds of victims. As is well known, human sacrifices formed a very important part of the religion of the ancient Mexicans. Their war god was constantly honored with them, and the companions of Cortez saw large piles of the skulls of those who had been sacrificed. On such occasions, after the heart had been cut with an obsidian knife from the living victim, it was offered to the sun and then to the god; the body was thrown down the teocalli and afterwards divided and eaten. The native allies of the Spaniards, in the siege of Mexico, ate the bodies of their dead enemy.* In the city of Mexico itself, as the siege was prolonged and food became scarce, the number of victims first sacrificed to propitiate the god of war in hope of relief, then served out as food to the starving people, was very large. These sacrifices were often made in the sight of the Spaniards, who sometimes recognized the lighter skin of their countrymen as they wound their way up to the sacrificial stone to be in turn distributed as food among the besieged.†

---

* Voyage of Adventure and Beagle. Vol. ii, pp. 183 and 189.

† See De Bry's narratives—Brazil, Voyage of Joannes Stadius, Hessus, pp. 71, 81, 89, 126 and 127; also voyage of Joannes Lerus, Burgundus, p. 213.

‡ Prescott, History of the Conquest of Peru. London, Bentley, 1854. p. 96.

§ Personal Narrative, Bohn's edition, Vol. ii, pp. 354, 411-415.

‖ Rev. J. G. Wood. Uncivilized Races in All Countries of the World. London, 1870. Vol. ii, p. 602.

¶ Prescott, History Conquest Mexico. Philadelphia, 1874. Vol. i, p. 81.

Of all the American cannibals the Caribs undoubtedly had a stronger love for human flesh than any others, and not only ate their enemies taken in battle as a matter of revenge as well as gratification, but, like the Fijians, even fattened their prisoners for the cook-house that they might make better and more palatable food.‡ It was also practised among the Iroquois, Algonquins, Mamis and Kickapoos; § it existed in Louisiana, || Illinois¶ and on the northwest coast. The most precise narratives we have of this practice are, however, to be found among the 'relations' of the Jesuits who were often eye-witnesses of the feasts of human flesh held by the Iroquois and Algonquin tribes.

One shudders with horror at the prolonged tortures which preceded death and the feast among these savage people. Every device cruelty could suggest was practised. Long before death, sometimes days, torture began. Burning brands were applied to the naked skin, nails were bitten from the fingers, and flesh from the limbs, gashes were cut in the arms and legs and hot brands thrust into them; the scalp was stripped from the head and live coals and hot ashes poured upon the bleeding surface. Women and children joined in these fiendish atrocities, and when at length the victim yielded up his life, his heart, if he were brave, was

---

* Ibid., Vol. iii, p. 132.

† Ibid., p. 153.

‡ Peter Martyr. Decade i, L. I., folio 2, A.

§ See notes of Hon. Lewis Cass to Ontwa the son of the Forest, a poem by Henry Whiting. New York, 1822, p. 129.

|| Father Hennepin. Description de la Louisiane, Paris, 1868. pp. 65, 68, 69.

ripped from his body, cut in pieces, broiled, and given to the young men under the belief that it would increase their courage; they drank his blood, thinking it would make them more wary, and finally his body was divided limb from limb, roasted or thrown into the seething pot, and hands and feet, arms and legs, head and trunk, were all stewed into a horrid mess, and eaten amidst yells, songs and dances.*

Much more might be added but enough has been said for our purpose, viz: to show that cannibalism being so common in other parts of America, there would be no improbability of its existence in Florida. We have entered more into details than we otherwise should because the subject of American cannibalism has not received the attention it deserves. Mr. Francis Parkman is almost the only one who has taken the trouble to call attention to the documentary evidence which exists bearing upon it, and I am largely indebted to his writings and to himself personally for references to original statements.

THE HISTORY OF THE LOBSTER.

At length we have in a paper by Mr. S. I. Smith, assistant in the Sheffield Scientific School, New Haven, a careful history of the changes undergone by our native lobster, with valuable information on the season of breeding, and other facts of practical interest. The lobster, so important as an article of diet, is dying out from overfishing, and the time may come when it will have to be artificially raised. The information afforded by Mr. Smith is a result of the comprehensive views of Professor Baird, U. S. Commissioner of fisheries, who, besides his own laborious inquiries into the condition and prospects of our fisheries, has called to his aid many naturalists, who have by their special researches, with the aid of the vessels and apparatus afforded by government,

---

*For a justification of this picture of savagery the reader is referred to La Potherie, Hist. de l' Amerique. Paris, 1722, p. 23. Relation of Barthelemy de Vimout, 1642, p. 46. Relation of Jean Brebeuf, July 1636, p. 121. Relation of Francois Joseph Le Mercier. June, 1637, p. 118. Relation of Vimout, 1644, p. 41.